GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF MINES AND ENERGY

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Surficial geology, along the Trans Canada Highway, between Port aux Basques and Corner Brook, Newfoundland.

by

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OPEN FILE (NFLD/2058)

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St. John's, Newfoundland

This open file consists of four maps with an unattached common legend. The area covered is along the Trans Canada Highway from Port aux Basques to just south of Corner Brook (Figure 1 and 2). These maps are reproductions at a scale of 1:50,000 from the complete map at a 1:250,000 scale. This open file is being released in this form to facilitate early access of the information. The complete map sheets will be available as:

Grant, D. R.

1990: Surficial Geology, Stephenville and Port aux Basques, Newfoundland; Geological Survey of Canada, Map 1737A, Scale 1:250,000, (in press).

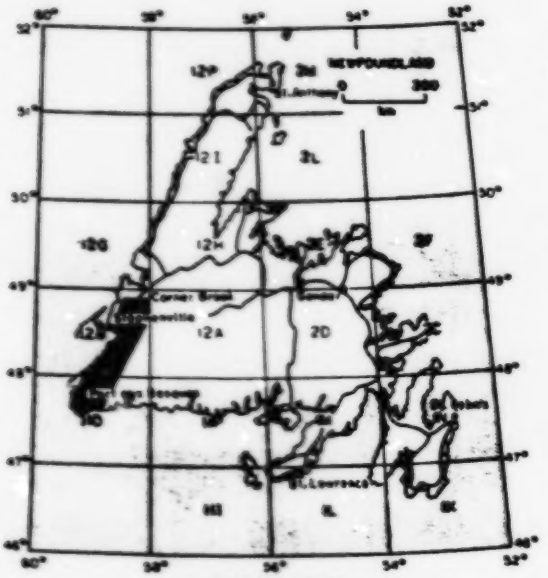

Figure 1:

Each unit delineated on the map represents the dominant surficial sediment cover within it. In practice, most areas are covered by a mixture of sediment types, but are mainly composed of the type designated in the legend. This map is based largely on aerial photography interpretations.

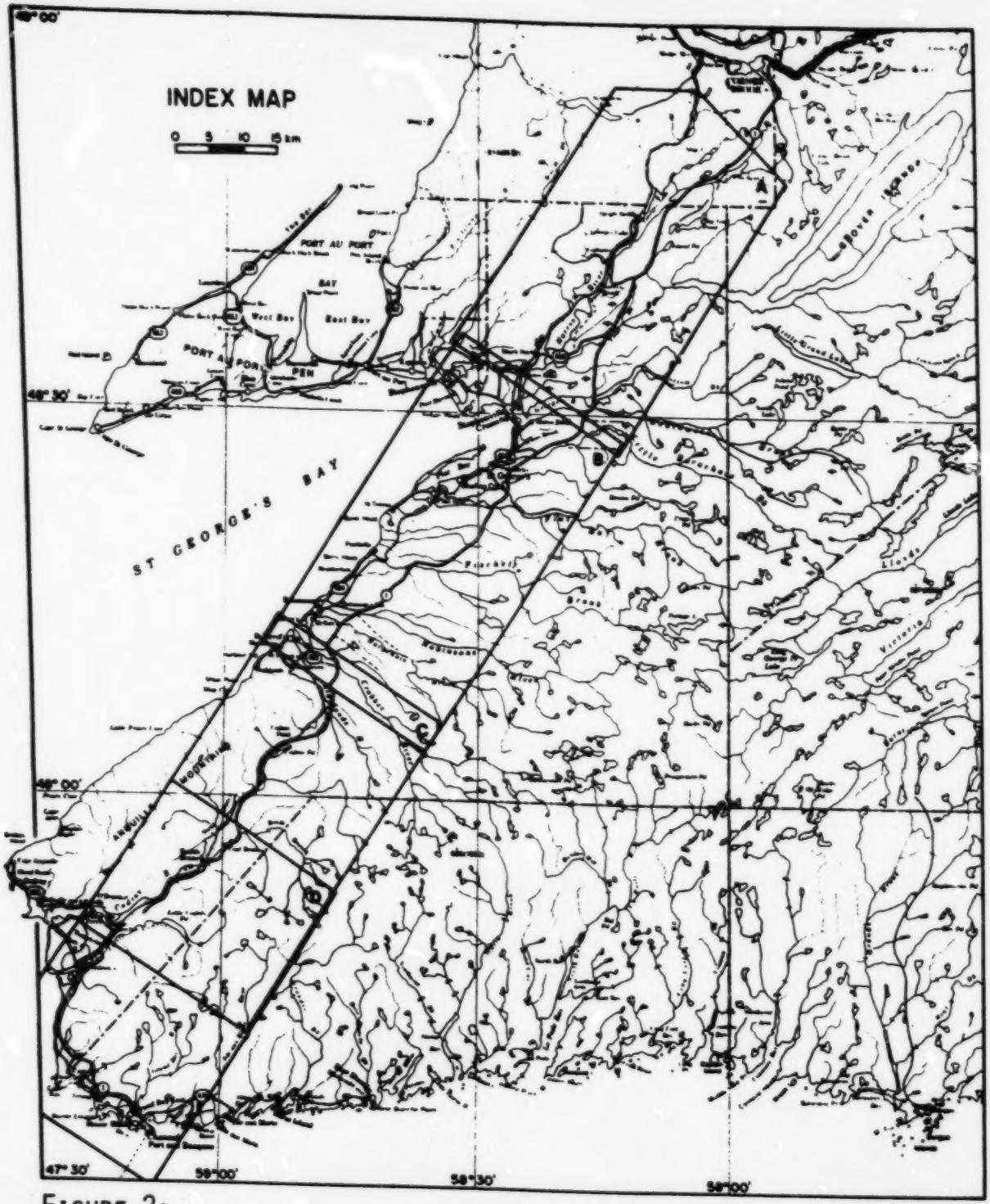
INDEX MAP
0 5 10 15 km
ST GEORGE'S BAY
PORT AU PORT BAY
PORT AU PORT PEN
West Bay
East Bay
A
B
C
D
48° 30'
48° 00'
47° 30'
58°00'
58°30'
58°00'

FIGURE 2:

POST-LAST GLACIATION

9	*MODERN TIDAL DEPOSITS: peat, sand, and silt underlying salt marshes in the intertidal zone; probably not exceeding 3 m thick*
8	*ORGANIC DEPOSITS: peat and muck underlying mainly bogs and fens, with minor swamps and marshes; thickness averages 2-3 m and probably not more than 10 m*
7	*COLLUVIAL DEPOSITS: blocky rubble with minor sand and mud interbeds emplaced by gravity sliding and debris flow by wastage of rock cliffs; may overlie other deposits; locally remobilized as rock glaciers, most of which are inactive.* *7a, talus and cliffs; 7b, thick apron on lower slopes by coalescence of adjacent fans*
6	*FLUVIAL DEPOSITS: sandy gravel, 1-20 m thick, underlying modern floodplains, deltas, and fans; may include small remnants of Holocene degradational terraces.* *6a, alluvial plains; 6b, alluvial fans*
	MARINE DEPOSITS: gravel, sand, silt, and clay, 1-30 m thick, laid down in beach, delta, and offshore environments during postglacial submergence
5c | 5d	*Beach gravel and sand in ridges, swales, and plains including modern marine deposits at the present coast, locally fossiliferous.* *5c, bulky accumulations up to 30 m thick, as beach-ridge complexes, terraces, and remnants of deltas (commonly overlies unit 5a); 5d, discontinuous veneer of beach gravel over till and bedrock*
5b	*Glaciomarine delta composed of ice contact outwash deposited at marine limit; generally sandy gravel, locally fossiliferous*
5a	*Stony mud, up to 20 m thick, deposited offshore in generally still water at depths as great as 150 m; thickest near former glacier recessional positions; includes submarine meltout till deposited adjacent to subaqueous end moraines, and glaciomarine drift deposited by melting icebergs; mainly fossiliferous*
	GLACIOFLUVIAL DEPOSITS: gravel with sand, 5-50 m thick, deposited by meltwater beneath and in front of a glacier
4b	*Outwash, 5-50 m thick, deposited on former floodplains and fans; locally includes postglacial degradational terraces; may overlie and grade laterally to marine deposits*
4a	*Ice contact stratified drift as hummocks and ridges (kames, kame moraines, crevasse fillings, and small eskers) cut by meltwater channels, and locally interspersed with undifferentiated till knolls*
	TILL: generally unsorted debris, up to 30 m or more thick; generally thin, bouldery and sandy over Precambrian rock highlands, thicker and more silty over sedimentary rock lowlands; locally clayey where deposited subaqueously as major end moraines
3c	*Till, generally 5-30 m thick, as continuous cover in the form of fluted or drumlinized plains and valley fillings, and as massive end moraines with included glaciomarine drift where deposited subaqueously; locally comprises two or more drift sheets*
3b	*Till, generally 2-10 m thick, as continous blanket showing relief of underlying bedrock surface; locally making up fields of ribbed moraine and other minor drift ridges and hummocks*
3a	*Till, generally less than 2 m thick, discontinuous veneer, with numerous rock outcrops and interspersed bedrock areas*

LAST GLACIATION

PRE-LAST GLACIATION

2b	*Till of variable thickness and composition with morainic topography partly subdued by solifluction and mass wasting; includes undivided areas of bedrock partly buried by blocky rubble produced by frost action and sandy debris (grus) produced by granular disintegration*
2a	*Till of variable thickness and composition, where all traces of glacial relief have been destroyed by protracted solifluction and where interspersed rocky areas have been reduced to mature blockfields (felsenmeer) from which small tors locally project*
1	*RESIDUUM: rubble and grus produced by disintegration of bedrock in place, about 2 m thick; possibly not covered by Quaternary glaciers*

PRE-QUATERNARY

Bedrock of various ages and lithologies showing strongly undulating relief of basins and knobs produced by glacial erosion; includes cliffs cut by glacial and coastal erosion, and areas stripped by nivation and wave washing

Rc	*Bedrock areas interspersed with undivided patches of thin till veneer*
Rb	*Bedrock areas largely obscured by forest vegetation; patches of till may be present mainly in low areas.*
Ra	*Exposed bedrock denuded by glaciation and by modern and postglacial, nivation and marine washing*

Geological boundary (defined, approximate, assumed)

Ridge following rock structure;
(sedimentary stratification, metamorphic foliation)

Depressional lineament following fault or fracture

Speculative stadial glacial limit (tooth on glacier side)

Pre-Wisconsinan (defined, inferred)

Late Wisconsinan (defined, inferred)

Cirque (pre-last glaciation, last glaciation and younger)

Small bedrock outcrop

Tor (weathered, castellated bedrock pinnacle)

Drumlin, fluting, linear till ridge (short, long)

Crag and tail hill (rock knob with till lodged on down-glacier side)

Roche moutonnée, rock drumlin, stoss and lee (ice-streamlined bedrock)

Striation, groove, and other small ice flow features (ice flow direction based on miniature crag and tail, stoss and lee, chattermarks; numbers indicate relative age (1, oldest); dot indicates point of observation)

Moraine ridge (end, lateral, interlobate);
(sharp crested, subdued by marine action or inferred)

Minor moraine, ribbed moraine, rogen moraine

Hummocky moraine

Concentration of large boulders

Esker; (direction of meltwater flow known or inferred, unknown)

Crevasse filling (ice contact, gravel ridge)

Kame, isolated gravel knoll

Kettle (ice-block depression)

Ice contact scarp (teeth facing former glacier margin)

Abandoned meltwater channel

Proglacial (large, small)

Submarginal (large, small, barb on uphill side)

Marine limit (defined, approximate)

Raised beaches

Terrace edge, marine or fluvial

Sag (or "sackung"; rock slope settling by slow, deepseated, gravitational creep); (symbol follows headwall; dot on downdropped side)

Fault or fracture with sharp edges (postglacial?)

Landslide, rock fall, mudslide, slump

Solifluction terraces, lobes, stripes

Nivation hollow

Rock glacier (active and inactive)

Sinkhole, line of sinkholes along stratification

Karst area (bedrock surface pitted with solution-collapse depressions; commonly mantled with till)

Marl (carbonate sediment in modern lake)

Composition, genesis or thickness of material uncertain ?

Marine fossil occurrence, with locality number of specimen in GSC collection 104333 (F)

Age	Material
Lab. no.	Elevation (m)

Radiocarbon age determination

Made ground (urban fill, airport, mine and quarry dump)

Stratigraphic section of special interest; number refers to table in accompanying report 15 +

Geology by Douglas R. Grant, 1985, 1986

Geological Cartography by the Geological Survey of Canada

Colour separation by computer assisted methods

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Base map assembled by the Geological Survey of Canada from maps published at the same scale by the Surveys and Mapping Branch, 1972, 1973
Roads were revised by the Geological Survey of Canada for this edition

Copies of the topographical editions covering this map area may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0E9

Mean magnetic declination 1989 24°09' west decreasing 6.2' annually. Readings vary from 24°44' W in the NE corner to 23°.32' in the SW corner of the map area

Elevations in feet above mean sea level

Bathymetry: Canadian Hydrographic Service, Department of Fisheries and Oceans, Canada. Bathymetric